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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/771,569	01/30/2001	James P. Clarkin	P 00277116	1204

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EXAMINER

TRAN, MY CHAU T

ART UNIT	PAPER NUMBER
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1639

DATE MAILED: 11/10/2003

19

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/771,569

Applicant(s)

CLARKIN ET AL.

Examiner

My-Chau T. Tran

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) 2,6,7,16,18,32 and 37-40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-5,8-15,17,19-31 and 33-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

1. Applicant's amendment filed 8/19/2003 in Paper No. 11 is acknowledged and entered.

Claim 1 is amended by the amendment.

2. Claims 1-41 are pending.

Election/Restrictions

3. Claims 2, 6-7, and 37 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected inventions, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 7.

4. This application contains claims 2, 6-7, and 37 are drawn to an invention nonelected with traverse in Paper No. 7. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

5. Claims 16, 18, 32, and 38-41 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a *nonelected species*, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 9. Claim 41 was inadvertently not included in the withdrawn claims in the previous Office Action due to a typographical error.

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Withdrawn Rejections

6. The priority rejection is withdrawn in view of applicant's amendment of the specification.
7. The previous rejections under 35 USC 112, second paragraph, for claims a, 3-5, 8-15, 17, 19-31, and 33-36 have been withdrawn in view of applicant's amendment of claim 1, and argument.
8. The previous rejection under 35 USC 102(b) as being anticipated by Oh (US Patent 5,904,824) for claims 1, and 12 has been withdrawn in view of applicant's amendments of claim 1 and arguments.
9. The previous rejection under 35 USC 102(b) as being anticipated by Sepaniak et al. (US Patent 5,176,881) for claims 1, 3, 11, and 13 has been withdrawn in view of applicant's amendments of claim 1 and arguments.
10. Claims 1, 3-5, 8-15, 17, 19-31, and 33-36 are treated on the merit in this Office Action.

Maintained Rejections

11. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

12. Claims 1, 3-4, 8-10, 14-15, 19, 21, 26, 28-29, 31, and 34-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Anderson et al. (US Patent 5,922,591).

The instant claimed device comprise of a substrate having two channels formed therein. The channels comprise of inlets, outlets, spaced apart, and are in a parallel direction. The device further comprise of at least one "endcap" channel (It is interpreted as the connection between two channel) being in fluid communication with at least one channel. The "endcap" substrate is interpreted as the same substrate of the device.

Anderson et al. disclose a microfluidic device comprises various reaction chambers and fluid passages (channels), which is manufactured onto the surface of the substrate (col. 17, lines 59-61; fig. 12c; col. 19, lines 29-33). The fluid channels have smaller dimensions relative to the chambers and range about 10 μm wide and 1 μm deep (e.g. a cross sectional area of about 0.1 mm^2) (col. 18, lines 30-40) (referring to claim 4). The body of the device (substrate) comprise of glass (referring to claim 15 and 31). The surfaces of the channel may be made more hydrophobic by coating the surface (col. 20, lines 33-40) (referring to claim 19). The channel comprise of inlets and outlets valves (col. 30, lines 41-50). In figure 12c, the device comprises a plurality of channels, wherein the main channel is ref. # 1252 (col. 30, lines 26-31). The various channels connecting the chambers to the main channel are in a parallel direction. The channels comprise of a "bend" ("endcap" channel) that connect two channels together and are spaced apart (fig. 12c). Therefore, the device of Anderson et al. anticipates the presently claimed invention.

Response to Arguments

13. Applicant's argument(s) directed to the above rejection under 35 USC 102(b) as being anticipated by Anderson et al. (US Patent 5,922,591) for claims 1, 3-4, 8-10, 14-15, 19, 21, 26, 28-29, 31, and 34-36 was considered but they are not persuasive for the following reasons.

Applicant contends that the device of Anderson et al. does not disclosed a “***drawn substrate***” therefore the device of Anderson et al. does not anticipates the presently claimed invention.

Applicant's arguments are not convincing since the device of Anderson et al. does anticipates the presently claimed invention. As define by the specification on pg. 6, a “*drawn substrate*” is “*the body of material drawn from a preform body*” (e.g. a substrate made from a preform body). Anderson et al. do disclose a “***drawn substrate***” in that “*the device may be formed from a plurality of distinct parts that are later assembled or mated*” (e.g. the device is made from preform parts (preform body)) (col. 18, lines 5-7). Therefore the device of Anderson et al. does anticipate the presently claimed device.

14. Claims 1, 3-5, 8-10, 14-15, 17, 20-31, and 33-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Beattie (US Patent 5,843,767).

The instant claimed device comprise of a substrate having two channels formed therein. The channels comprise of inlets, outlets, spaced apart, and are in a parallel direction. The device further comprise of at least one “endcap” channel (It is interpreted as the connection between two channel) being in fluid communication with at least one channel. The “endcap” substrate is interpreted as the same substrate of the device.

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Beattie disclose a device comprise of a nanochannel glass array (col. 9, lines 60-67). The array comprise of inserting a cylindrical glass rod into an inert glass tube (col. 9, lines 62-67) (channel in parallel direction). The pair is drawn under a vacuum to reduce the overall cross-sectional area (col. 9, line 67 to col. 10, line 1). The length of the channels is about 0.1 to 1.0 mm with a diameter of 300 nm (0.07 mm^2) and a center-to-center spacing of about 750 nm (col. 10, lines 10-31). Therefore, the device of Beattie anticipates the presently claimed inventions.

Response to Arguments

15. Applicant's argument(s) directed to the above rejection under 35 USC 102(b) as being anticipated by Beattie (US Patent 5,843,767) for claims 1, 3-5, 8-10, 14-15, 17, 20-31, and 33-36 was considered but they are not persuasive for the following reasons.

Applicant alleges that the device of Beattie does not disclosed a “***drawn substrate***” does not disclosed a “***drawn substrate***” therefore the device of Beattie does not anticipates the presently claimed invention.

Applicant's arguments are not convincing since the device of Beattie does anticipates the presently claimed invention. As define by the specification on pg. 6, a “***drawn substrate***” is “*the body of material drawn from a preform body*” (e.g. a substrate made from a preform body). Beattie discloses that the array (substrate) begins by inserting glass rod into glass tube (preform bodies) and the pair is then drawn under vacuum to reduce the overall cross-section to that of a fine filament (e.g. the device is made from preform body) (col. 9, lines 62-67 to col. 10, line 1). Therefore, the device of Beattie does anticipate the presently claimed device.

New Rejections - Necessitated by Amendment

Claim Rejections - 35 USC § 102

16. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

17. Claims 1, 5, and 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Jansen (US Patent 5,173,097).

Jansen discloses a drawn substrate (col. 3, lines 11-17; figures 2(a) and 3(b)). The drawn substrate comprise of optical waveguide and channels that extend in a direction parallel to the length (figure 3(b); col. 3, lines 22-35; col. 44-60) (referring to claims 1 and 11). The drawn substrate include an inlets and outlets (figure 13). Although the channel length having a range of 1mm to 1km (e.g. claim 5) is not specifically disclosed, the length of the channel would be a choice as experimental design and is considered within the purview of the prior art. Therefore, the drawn substrate of Jansen anticipates the presently claimed invention.

Conclusion

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to My-Chau T. Tran whose telephone number is 703-305-6999. The examiner can normally be reached on Monday: 8:00-2:30; Tuesday-Thursday: 7:30-5:00; Friday: 8:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew J. Wang can be reached on 703-306-3217. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1235.

mct
November 6, 2003


PADMAASHRI PONNALURI
PRIMARY EXAMINER